

THE FLORA OF ULUPNA ISLAND RESERVE

by

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INTRODUCTION

Ulupna Island is situated in northern Victoria at approximately 145° 50' east and 35° 50' south, and is bounded by the Murray River and one of its anabranches named Ulupna Creek. The nearest towns include Strathmerton, Echuca, Numurkah, Tocumwal, Cobram and Yarrawonga. The reserve itself lies in the southwestern portion of the island and has an area of about 840 acres. A somewhat smaller area of State Forest adjoins it to the north. Ulupna Island has been allotted the grid reference L 54 in the mapping scheme for the flora of Victoria now being undertaken jointly by Monash University and the National Herbarium of Victoria.

At the National Herbarium there was, until recently, no list of plants for Ulupna Island, nor even for Barnah Forest which adjoins the Murray River not far downstream. Apparently none of the early botanists had collected there, nor had any of the more recent ones. There is also a dearth of published information which is referable to the flora nearby. Leigh and Mulham (1965) discuss only the more common species of an area which includes Ulupna Island. McBarron (1955) lists the plants of a nearby region. J. H. Willis (personal communication) has drawn up a list of plants (unpublished) for Nathalia, about 20 miles away, where the flora is somewhat different. In view of the lack of information which applies to this reserve specifically and in detail, the author has found the listing of plant species for it to be most rewarding.

Apart from extending the range of a number of species, this study has resulted in the discovery of two very uncommon species:—*Brachycome muelleroides* and *B. readeri*. *B. muelleroides* was recorded from Picola, Victoria, in 1930 by J. H. Willis, but it has not been found there since, although it is known from several localities in southern New South Wales. *B. readeri* has been previously recorded only from a few widely scattered localities in Victoria and south-eastern South Australia. Another species worth mentioning is the introduced *Ludwigia palustris*. Aston (1967) has written a note concerning its discovery along the Ovens and Kiewa Rivers. The author discovered it in the Ulupna Island Reserve on 25 October 1967, and subsequently it was found along the Wonnangatta River, and along the Murray River just downstream from the Ovens River confluence.

* National Herbarium of Victoria.

ESTABLISHMENT OF THE RESERVE

The Strathmerton district was first taken up as a pastoral run in 1842 or shortly before. Since that time farming there has become more diversified, with a consequent clearing of the land. Nevertheless some of it towards the Murray River was still under native pasture and carried the original trees until about 1963, when much of this was cleared and ploughed up for wheat. Virtually the only remaining areas of natural vegetation in the district were the State Forest adjoining the Murray River and Crown Land on Ulupna Island. It was generally believed that the latter was State Forest until enquiries were made by a local resident, Mr. W. Stebbing, who realized that it had considerable scenic value and was well worth preserving. As a result of his initial interest a committee was formed in 1966 to investigate the possibility of having this Crown Land reserved. Information on its value was supplied by several organizations and government departments, includ-

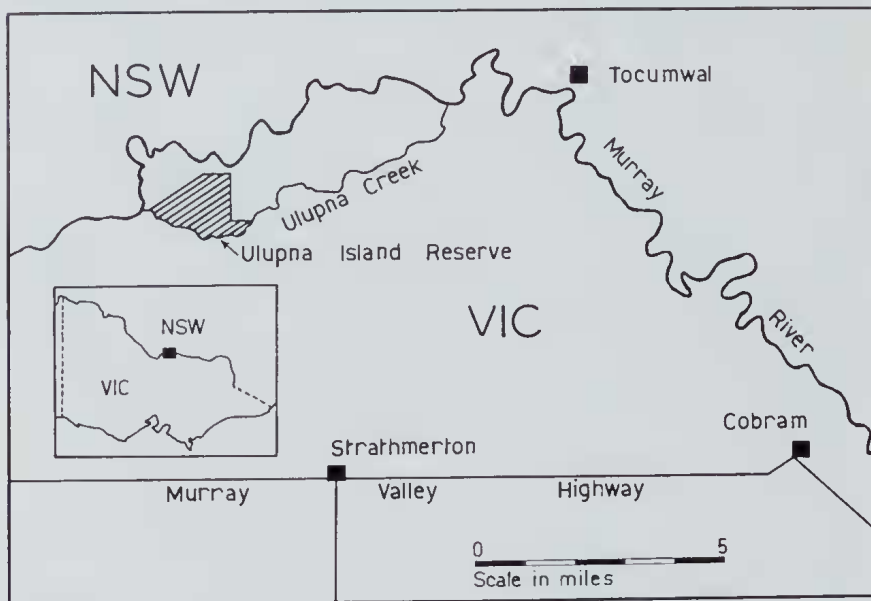


Fig. 52—Location of Ulupna Island Reserve.

ing the National Herbarium which was asked for a list of the plants. The author made several trips to the proposed reserve to study the vegetation and prepare such a list. Subsequently, the land was officially proclaimed a Public Purposes (Preservation of Flora and Fauna) Reserve on 5 August 1969.

CLIMATE AND GEOLOGY

Ulupna Island is part of the flood-plain of the Murray River, and consists of geologically recent alluvial deposits at an altitude of approximately 350 feet above sea-level.

Flooding takes place periodically in Barmah Forest, and less frequently on Ulupna Island, but precise figures have apparently not been published. Ulupna Creek itself is a permanent stream.

The following figures on the climate are approximate since they are based on those for other places in the district. None is available for Ulupna Island itself, but it is unlikely that there will be any marked differences. The average yearly rainfall is approximately 17 inches, with most of this rain falling between June and October. January and February are the hottest months with an average maximum temperature of 88°, and July is the coldest with an average maximum of 56°. The average date of the first and last frosts of 32° is 28 June and 7 August respectively.

VEGETATION

At present a total of 178 species of plants has been listed for the reserve. Of the lower plants, five are lichens and two are mosses, but undoubtedly there are more of these, as well as fungi, to be discovered. Of the flowering plants and ferns, one third are naturalized aliens. *Compositae* is by far the largest family with 35 species, about one third of them being introduced. These unfortunately include some aggressive weeds such as *Carthamus lanatus*, *Cirsium vulgare*, *Chondrilla juncea* and *Hypochaeris glabra*. The *Gramineae* is another large family with 28 species, just over half of them being introduced. In contrast the remaining families are represented by up to six species each.

The reserve is generally flat, with most of the species distributed uniformly over it. There is some slight variation in topography because of a few billabongs and shallow depressions, and a number of shallow water courses which run south-westerly into Ulupna Creek. Water lies in these for a short time periodically. Consequently there is a corresponding slight variation in the distribution of the species.

The trees are the dominant and most attractive feature, and give the area a very pleasant park-like appearance. They are generally well-spaced and the canopy is nowhere closed, although in some places there are dense stands of young trees. There are a few small clearings. *Eucalyptus camaldulensis* is the dominant species. Other trees are few, viz. *E. melliodora* and *E. microcarpa* in the south-eastern section, *Exocarpos cupressiformis*, *Pittosporum phillyreoides*, *Acacia inplexa*, *A. dealbata*, and *Schinus molle*, the only introduced tree. Shrubs likewise are few, but small annuals and herbaceous perennials are abundant.

In the more open places the ground cover is low and the soil can be seen between the plants. Some of the species are perennials which die back to a tuberous root during summer, e.g. *Anguillaria dioica*, *Arthropodium minus*, and *Bulbine bulbosa*. Others have a thick rootstock which enables them to survive the dry summer, e.g. *Convolvulus erubescens*, *Geranium solanderi*, *Rumex brownii*, *R. crystallinus*, *Sida corrugata*, and *Wahlenbergia quadrifida*. Some are ephemerals, e.g.

Goodenia pinnatifida, *Helipterum australe*, *H. corymbiflorum*, *Stuartina muelleri*, and *Wahlenbergia gracilentia*. Other common species are *Alternanthera denticulata*, *Cotula australis*, *Crassula macrantha*, *C. peduncularis*, *C. sieberana*, *Danthonia caespitosa*, *D. setacea*, *Echium lycopsis*, and *Oxalis corniculata*.

Beneath the trees the flora is similar but the plants are further apart, and the soil here is partly covered by litter from the trees.

In the depressions the plants grow densely but only to a height of more or less 12 inches. Species found in the more shallow depressions include *Brachycome muelleroides*, *B. readeri*, *Hordeum hystrix*, and *Marsilia drummondii*. Where water lies well into the spring, *Hypoxis hygrometrica*, *Mimulus gracilis*, and *Utricularia dichotoma* will be found.

The billabongs hold water all or most of the year, and this enables aquatic and swamp species to survive. Aquatic species found here are *Azolla pinnata*, *Callitriche stagnalis*, *Myriophyllum propinquum*, *Ottelia ovalifolia*, *Potamogeton sulcatus*, *Triglochin procera*, and *Vallisneria spiralis*. *Carex inversa*, *C. tereticaulis*, *Eleocharis acuta*, *E. pusilla*, *Glossostigma elatinoideis*, *Isotoma fluviatilis*, *Juncus bufonius*, *Juncus* sp., *Polygonum prostratum*, and *Pratia concolor* grow in the damp soil bordering these billabongs.

Beneath the trees along Ulupna Creek plants grow more rampantly. It is only here that *Acacia dealbata* is found. *Mentha australis* and *M. satureioides* are both common here.

Naturally there is no sharp division between the habitats described, consequently the species mentioned here for any particular habitat, may also be found to a lesser extent in others.

Up to the present the reserve has suffered remarkably little from grazing or from timber-cutting. The number of species of native flowering plants and ferns (118) is very high for this type of country and for such a small area. Introduced species make up one third of the total but there seem to be only two which are a problem. *Echium lycopsis* is fairly widespread, and *Carthamus lanatus*, although common only in the eastern section, could easily become a serious pest. It is to be hoped that every effort will be made to keep this reserve in a good state of preservation, and at the very least prevent the spread of weeds. The native species have virtually disappeared from the plains of central northern Victoria, except for those in a few River Red Gum forests adjoining the Murray River, and some scattered remnants on roadsides and creek banks. The latter have a limited life, mainly because of encroachment of weeds, so the reserve on Ulupna Island is particularly important, not only because of its scenic value but also because it is such a good example of a flora now almost exterminated in Victoria.

With regard to changes which may take place in the flora, two factors will be important—grazing and the regeneration of the River Red Gum. Although grazing has resulted in little damage up to the



Isotoma fluviatilis growing in damp soil beside a billabong.



Typical *Eucalyptus camaldulensis* on Ulupna Island Reserve.

present, it might intensify that damage unless reduced. The Committee of Management hopes to fence an area of perhaps forty acres which will then be protected from stock and rabbits. If this can be done the subsequent changes in the vegetation, especially in the ground flora, would be a guide to future management. It would also be of interest to know the effect of grazing by the Grey Kangaroo and the emu, both of which are native to this area and still present in small numbers. (It is worth mentioning that the koala was also found here in past years). Certainly some grazing seems necessary to prevent excessive growth of vegetation which would become a fire hazard when dry. The River Red Gum is very sensitive to fire and it would be advisable to avoid conditions in which a fire could start. The regeneration of the River Red Gum has been studied in Barmah Forest by Dexter (1967). He has found that grazing by cattle can be an aid in regeneration, as plants which may otherwise compete with the seedling trees are suppressed. On the other hand regulation of the flow of the Murray River has resulted not only in less frequent flooding but also in floods recurring more often in summer, both these changes having an adverse effect on regeneration. It remains to be seen how much these factors will affect the flora of the reserve on Ulupna Island.

ACKNOWLEDGEMENTS

I am most grateful to Mr. W. Stebbing of Katunga, who has taken a keen interest in the flora of the reserve, and who was responsible for finding a number of the uncommon and consequently more interesting species. He has given up much of his time to accompany me on my visits to the island and without his help I could not have listed the plants adequately. I am also grateful to Messrs. R. O'Malley and J. Farrell for information and hospitality.

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FLORA OF ULUPNA ISLAND RESERVE, VICTORIA

(Compiled mainly from identifications made by the author, subsequent to visits on 25 October 1967, 29 October 1968, 7 October 1969, and 28 September 1970, with a few additions from slides or specimens taken by W. Stebbing of Katunga.)

Naturalised aliens are indicated by *

Native species ..	125
Naturalised aliens ..	53

Total 178 at 17 May 1972.

LICHENS

Graphis sp.
Lecanora sp.
Lepraria caudularis (L.) Fries
Physcia sp.
Teloschistes sieberianus (Laur.) Hillm.

MOSES

Tortula princeps (C. Muell.) De Not.
Triquetrella papillata (Hook. f. & Wils.) Broth.

FERNS

Azolla pinnata R. Br.
Marsilea drummondii A. Br.

FLOWERING PLANTS

I. MONOCOTYLEDONS

Pontamogetonaceae

Pontamogeton sulcatus A. Bennett

Juncaginaceae

Triglochin procera R. Br.

Alismataceae

Danthonium minus (R.Br.) Buch.

Hydrocharitaceae

Ottelia ovalifolia (R. Br.) L. C. Rich.
Vallisneria spiralis L.

Gramineae

Agropyron scabrum (Labill.) Pal. Beauv.
Agrostis avenacea J. F. Gmel.
 **Aira caryophylla* L.
Alopecurus geniculatus L.
Amphibromus ueesii Steud.
 **Briza minor* L.
 **Bromus mollis* L.
 **B. rubens* L.
 **B. sterilis* L.
Cynodon dactylon (L.) Pers.
Danthonia caespitosa Gaudich.
D. setacea R. Br.
Deyeuxia quadriseta (Labill.) Benth.
 **Hordium hystrix* Roth
 **H. leporinum* Link
 **Koeleria phleoides* (Vill.) Pers.

- **Lolium loliaceum* (Bory & Chaub.) Hand.-Mazz.
- **L. multiflorum* Lam.
- **L. perenne* L.
- **Phalaris minor* Retz.
- Phragmites communis* Trin.
- **Poa annua* L.
- P. australis* sp. agg.
- Stipa variabilis* D. K. Hughes
- Themeda australis* (R. Br.) Stapf
- **Vulpia bromoides* (L.) S. F. Gray
- **V. megalura* (Nutt.) Rydb.
- **V. myuros* (L.) K. C. Gmel.

Cyperaceae

- Carex inversa* R. Br.
- C. tereticaulis* F. Muell.
- Cyperus exaltatus* Retz.
- Eleocharis acuta* R. Br.
- E. pusilla* R. Br.

Juncaceae

- Juncus bufonius* L.
- J. sp.*, aff. *J. australis* Hook. f.

Liliaceae

- Anguillaria dioica* R. Br.
- Arthropodium minus* R. Br.
- Bulbine bulbosa* (R. Br.) Haw.
- Dianella laevis* R. Br.
- Tricoryne elatior* R. Br.

Hypoxidaceae

- Hypoxis hygrometrica* Labill.

2. DICOTYLEDONS

Santalaceae

- Exocarpos cupressiformis* Labill.
- E. strictus* R. Br.

Loranthaceae

- Amyema miquellii* (Lehm.) Van Tiegh.
- A. pendulum* (Sieber ex Spreng.) Van Tiegh.

Polygonaceae

- **Polygonum aviculare* L.
- P. hydropiper* L.
- P. prostratum* R. Br.
- Rumex brownii* Campd.
- R. crystallinus* Lange

Amaranthaceae

- Alternanthera denticulata* R. Br.

Molluginaceae

- Glinus lotoides* L.

Caryophyllaceae

- **Cerastium glomeratum* Thuill.
- **Petrorhagia velutina* (Gussone) Ball & Heywood

Spergularia rubra (L.) J. & C. Presl

Stellaria caespitosa Hook. f.

**S. media* (L.) Cyrillo

**S. palustris* Ehrh. ex Retz.

Ranunculaceae

**Ranunculus muricatus* L.

R. pumilio R. Br. ex DC. var. *politus* R. Melville

R. rivularis sp. agg.

Cruciferae

**Capsella bursa-pastoris* (L.) Moench

Cardamine sp.

Crassulaceae

Crassula macrantha (Hook. f.) Diels

C. peduncularis (Sm.) Meiger

C. sieberana (Schult. & Schult. f.) Druce

Pittosporaceae

Pittosporum phillyreoides DC.

Rosaceae

**Aphanes arvensis* L.

Mimosaceae

Acacia acinacea Lindl.

A. dealbata Link

A. genistifolia Link

A. implexa Benth.

Papilionaceae

**Medicago polymorpha* L.

Swainsona procumbens (F. Muell.) F. Muell.

**Trifolium arvense* L.

**T. campestre* Schreb.

**T. glomeratum* L.

**T. tomentosum* L.

Geraniaceae

Geranium solanderi R. Carolin

Oxalidaceae

Oxalis corniculata L.

Linaceae

Linum marginale A. Cunn. ex Planch.

Euphorbiaceae

Euphorbia drummondii Boiss.

Callitrichaceae

Callitriche stagnalis Scop.

Anacardiaceae

**Schinus molle* L.

Malvaceae

Sida corrugata Lindl.

Violaceae

Viola betonicifolia Sm.

Menyanthaceae

Nymphoides crenatum (F. Muell.) O. Kuntze

Myrtaceae

Eucalyptus camaldulensis Dehnh.
E. melliodora A. Cunn. ex Schauert
E. microcarpa (Maiden) Maiden

Onagraceae

**Epilobium adenocaulon* Hausskn.
E. cinereum A. Rich.
**Ludwigia palustris* (L.) Ell.
**Oenothera striata* Ledeb.

Haloragaceae

Myriophyllum propinquum A. Cunn.

Umbelliferae

Daucus glochidiatus (Labill.) Fisch. et al.
Eryngium rostratum Cav.
Hydrocotyle sp.

Primulaceae

**Anagallis arvensis* L.

Gentianaceae

**Cicenda quadrangularis* (Domb. ex Lam.) Griseb.

Lythraceae

Lythrum sp.

Convolvulaceae

Convolvulus erubescens Sims
Dichondra repens Forst. & Forst. f.

Boraginaceae

Cynoglossum sp.
**Echium lycopsis* L.
Plagiobothrys elachanthus (F. Muell.) I. M. Johnston

Verbenaceae

**Verbena* sp.

Labiatae

Mentha australis R. Br.
**M. pulegium* L.
M. satereioides R. Br.

Solanaceae

Nicotiana sp.
**Solanum nigrum* L.

Scrophulariaceae

Glossostigma elatinoides (Benth.) Benth. ex Hook. f.
Minulus gracilis R. Br.
**Parentucellia latifolia* (L.) Caruel
Veronica peregrina L.

Lentibulariaceae

Utricularia dichotoma Labill.

Plantaginaceae

- **Plantago coronopus* L.
- P. varia* R. Br.

Rubiaceae

- **Galium murale* (L.) All.

Cucurbitaceae

- **Cucumis myriocarpus* Naudin

Campanulaceae

- Wahlenbergia fluminalis* (J. M. Black) Wimmer ex Hj. Eichler
- W. gracilentia* N. Lothian
- W. quadrifida* (R. Br.) Alph. DC.
- W. sp. aff. W. stricta* Sweet

Lobeliaceae

- Isotoma fluviatilis* (R. Br.) F. Muell. ex Benth.
- Pratia concolor* (R. Br.) Druce

Goodeniaceae

- Goodenia gracilis* R. Br.
- G. pinnatifida* Schlechtendal

Compositae

- **Arctotheca calendula* (L.) Levyns
- Brachycome basaltica* F. Muell. var. *gracilis* Benth.
- B. decipiens* Hook. f.
- B. ? goniocarpa* Sond. & F. Muell.
- B. muelleroides* G. L. Davis
- B. readeri* G. L. Davis
- Calotis hispidula* (F. Muell.) F. Muell.
- **Carduus tenuiflorus* Curt.
- **Carthamus lanatus* L.
- Centipeda cunninghamii* (DC.) A. Br. & Aschers
- C. minima* (L.) A. Br. & Aschers
- **Chondrilla juncea* L.
- **Cirsium vulgare* (Savi) Ten.
- Cotula australis* (Sieber ex Spreng.) Hook. f.
- **C. bipinnata* Thunb.
- Craspedia glauca* (Labill.) Spreng.
- C. globosa* (Bauer ex Benth.) Benth.
- Cymbonotus lawsonianus* Gaud.
- Eclipta playglossa* F. Muell.
- Gnaphalium indutum* Hook. f.
- G. involucratum* Forst. f.
- G. luteo-album* L.
- G. purpureum* L.
- **Hedypnois cretica* (L.) Willd.
- Helipterum albicans* (A. Cunn.) DC.
- H. australe* (A. Gray) Druce
- H. corymbiflorum* Schlechtendal
- **Hypochaeris glabra* L.
- Leptorhynchus squamatus* (Labill.) Lessing
- Myriocephalus rhizocephalus* (DC.) Benth.
- Senecio quadridentatus* Labill.
- Solenogyne bellioides* Cass. var. *gunnii* (Hook. f.) G. L. Davis
- **Sonchus asper* (L.) Hill
- **S. oleraceus* L.
- Vittadinia cuneata* DC.